

SEQUENCE LISTING

<110> TANG, Jiliang
HE, Yongqiang
TANG, Dongjie
FENG, Jiaxun
CHEN, Baoshan
LU, Guangtao
JIANG, Bole
XU, Rongqi

<120> A GENE ENCODING PHOSPHOENOLPYRUVATE SYNTHASE FOR PLANT PROTECTION
(AS AMENDED)

<130> 606932000100

<140> US 10/581,099

<141> 2004-12-01

<150> PCT/CN2004/001386

<151> 2004-12-01

<150> CH200310116875.X

<151> 2003-12-01

<160> 4

<170> PatentIn version 3.1

<210> 1

<211> 2629

<212> DNA

<213> *Xanthomonas campestris* pathovar *campestris*

<400> 1

tttcagcggg	gataccgggt	ccatcggaca	cgtaaaacac	cggcgggatt	gttgacatcg	60
actccacctc	tttgaactag	tgccccaaac	ttacggggttc	atgctttgtgc	aggctccgct	120
gtgcactgca	tcatagcggc	ttcttcctac	ggtcgcggcc	attcagcccg	ctcgggcatg	180
ggccatcagg	agcatcgccg	ttgaacgaga	atatcctgtg	gttgcatgag	ctacgcctgg	240
tcgatctggc	ccgcgtaggg	ggtaaaaaat	cctcgctcgg	cgagatgatc	ggcaacctgg	300
ccgggttggg	cggttcgggt	cccggtggat	atgcgaccac	tgccgaagca	ttcaaggata	360
tcatcgcgca	caacgatctg	tcaaagcgca	ttttcgacaa	gctggagacg	ctggacggtg	420
aagacgtcac	cgcgctcacg	gtcgccggca	aggagatccg	cggtcgggtg	atcgacgccc	480
cgctcgagcc	ggagctggac	cgcgacatcc	gcagcgcccta	cgaaaaaactc	tgcccgcgaga	540
acggcgccgg	cgaagtggcc	gtggctgtgc	gttcgtcgcc	aaccgcggaa	gacctgcgcc	600
atgcctcggt	cgccggccag	caggaaaacct	tctcaatgt	gaccggcgcc	gacgacgtgg	660
tgacaaaggt	caaggaagta	ttcgccagcc	tctacaacga	ccgcgcgatt	gcctacccgg	720
tgacaccagg	cttcaagcac	gaagatgtgt	tctgtcgcc	cggcgtgcag	ttgatgtgtc	780
gctccggcgt	gggttcgtcc	ggcgtgttgt	tcaccttgga	caccagatcc	ggcttcctgg	840
acgtgtgtgt	cgttcacctc	agcttcggcc	tgggcgaaat	ggtcgtgcaa	ggcgcggtca	900
atccggagca	gttctacgtc	tacaagccca	cgctcactgc	gggcaaggcg	gcaatcctgc	960
gccgctcgct	cgcgagcaag	gcaatccgca	tggtgtattc	ggaatgtgcc	ggtgaacgcg	1020
tgccgatcga	agacacgcgc	gtggagttgc	gcaacacttt	ctcgatcagc	gcgaagatg	1080
tcgaggagct	ctccaagcag	gcgctgggtg	tcgaaaagca	ttacggcccg	ccgatggata	1140
tcgagtgggc	caaggacggc	gtgagcgcca	agctgttcac	cgtagcaggc	cgcccgagga	1200
cggtgaagtc	gcgcagccat	gccaccacga	tcgagcgttt	ctcgttgtaa	gccaaaggac	1260
ccaagatcct	ggtcgaaagg	cgctgcggtg	gcgccaaagt	cggcgcacgc	gtggcacgcg	1320
tggtgcgtct	gctggaagac	atgaatcgcg	tcgaggccgg	cgacgtgctg	attgcgcaca	1380
tgaccgaccc	cgattgggag	ccgggtgatga	agcgtgcctc	ggccatcgtc	accaaccgcg	1440
gtggccgcac	ctgcaccgcg	gcgatcatcg	cgcgcgaaat	ggcgctgcgc	gcggtggtgg	1500
gttcggggca	tgcgaccgac	gtcatcagcg	acggccagga	agtcaccgtg	agctgcgcgc	1560

agggcgacac	cggtcttcac	tatgaaggt	tgctgcggt	cgagcgccac	accaccgacc	1620
tgggcaacat	gcgcctgcc	ccgctcaaga	tcacatgatga	cggtggccaac	ccggagcgcg	1680
cattcgactt	cgccagctg	cccaacgcgc	gtatcggtt	ggcgcgctg	gagatgatca	1740
tcgcccgcga	catcgccatc	catcccaacg	cactgctgga	ataccgacaag	caggacgccc	1800
acgtccgcaa	gaagatcgac	gccaagattg	cgggctacgg	cgaccgggtg	agcttctaca	1860
tcaaccgcct	ggccgaaggc	atcgcgacc	tgaccgcgtc	gggtggcgccg	aacacggtga	1920
tcgtgcggtt	gtcggaattc	aagtccaacg	aatacgccaa	cctgatcggt	ggctcgcggt	1980
acgagccgta	cgaagagAAC	ccgatgatcg	gctccgcgg	cgccagccgt	tatgtcgate	2040
cgctcctcac	caaggcggtt	tcgctggagt	gcaaggcggt	gttgaagggtg	cgcaacgaga	2100
tgggcctgga	caacctctgg	gtcatgattc	cgttcgtgcg	cacgctggag	gaaggccgca	2160
aggtgatcga	gggtgtggag	cagaacgggc	tcaacaagg	cgagaacggc	ctgaagatca	2220
tcagtatgtg	cgagctggcg	tccaatgcgc	tgctggccga	tgagttctctg	gagatctctg	2280
acgggtcttc	gacggctcc	aacgacctga	ccagctcac	cctggcgctg	gaccgcgatt	2340
cctcgatcgt	ggcgacctg	ttcgacgagc	ggaaccgcgc	ggtagaaaag	ctgctgtcga	2400
tggcgatcaa	gtcggcgcg	gccaaaggca	agtaacgtgg	catctgcggc	cagggggcgt	2460
cggatcaccc	ggaactggcc	gagtggttga	tgaggaaagg	catcgagctg	gtgtcgtcga	2520
atcctgacac	cggtgtcgat	acctggctgc	gctggccaa	gctcaagagc	gaggggtgat	2580
gggaatggtg	gggtgaggtg	tggcgggcgc	tgcgggagcg	ggcgccgca		2629

<210> 2

<211> 792

<212> PRT

<213> *Xanthomonas campestris* pathovar *campestris*

<400> 2

Leu	Asn	Glu	Asn	Ile	Leu	Trp	Leu	His	Glu	Leu	Arg	Leu	Val	Asp	Leu
1			5					10					15		
Ala	Arg	Val	Gly	Gly	Lys	Asn	Ser	Ser	Leu	Gly	Glu	Met	Ile	Gly	Asn
		20					25						30		
Leu	Ala	Gly	Leu	Gly	Val	Ser	Val	Pro	Gly	Gly	Tyr	Ala	Thr	Thr	Ala
		35				40						45			
Glu	Ala	Phe	Lys	Asp	Phe	Ile	Ala	His	Asn	Asp	Leu	Ser	Lys	Arg	Ile
		50				55					60				
Phe	Asp	Lys	Leu	Glu	Thr	Leu	Asp	Val	Glu	Asp	Val	Thr	Ala	Leu	Thr
65				70					75					80	
Val	Ala	Gly	Lys	Glu	Ile	Arg	Gly	Trp	Val	Ile	Asp	Ala	Pro	Leu	Gln
			85						90					95	
Pro	Glu	Leu	Asp	Arg	Asp	Ile	Arg	Ser	Ala	Tyr	Glu	Lys	Leu	Cys	Ala
			100				105						110		
Glu	Asn	Gly	Gly	Gly	Glu	Val	Ala	Val	Ala	Val	Arg	Ser	Ser	Ala	Thr
		115				120						125			
Ala	Glu	Asp	Leu	Pro	Asp	Ala	Ser	Phe	Ala	Gly	Gln	Gln	Glu	Thr	Phe
		130				135					140				
Leu	Asn	Val	Thr	Gly	Ala	Asp	Asp	Val	Val	His	Lys	Val	Lys	Glu	Val
			145		150				155					160	
Phe	Ala	Ser	Leu	Tyr	Asn	Asp	Arg	Ala	Ile	Ala	Tyr	Arg	Val	His	His
			165					170						175	
Gly	Phe	Lys	His	Glu	Asp	Val	Phe	Leu	Ser	Ala	Gly	Val	Gln	Leu	Met
			180				185						190		
Val	Arg	Ser	Gly	Val	Gly	Ser	Ser	Gly	Val	Leu	Phe	Thr	Leu	Asp	Thr
		195				200						205			
Glu	Ser	Gly	Phe	Arg	Asp	Val	Val	Phe	Val	Thr	Ser	Ser	Phe	Gly	Leu
		210			215						220				
Gly	Glu	Met	Val	Val	Gln	Gly	Ala	Val	Asn	Pro	Asp	Glu	Phe	Tyr	Val
225				230					235					240	
Tyr	Lys	Pro	Thr	Leu	Thr	Ala	Gly	Lys	Pro	Ala	Ile	Leu	Arg	Arg	Ser
			245					250						255	
Leu	Gly	Ser	Lys	Ala	Ile	Arg	Met	Val	Tyr	Ser	Asp	Val	Pro	Gly	Glu
			260				265						270		

Arg	Val	Arg	Ile	Glu	Asp	Thr	Pro	Val	Glu	Leu	Arg	Asn	Thr	Phe	Ser	275	280	285
Ile	Ser	Asp	Glu	Asp	Val	Gln	Glu	Leu	Ser	Lys	Gln	Ala	Leu	Val	Ile	290	295	300
Glu	Lys	His	Tyr	Gly	Arg	Pro	Met	Asp	Ile	Glu	Trp	Ala	Lys	Asp	Gly	305	310	315
Val	Ser	Gly	Lys	Leu	Phe	Ile	Val	Gln	Ala	Arg	Pro	Glu	Thr	Val	Lys	320	325	330
Ser	Arg	Ser	His	Ala	Thr	Gln	Ile	Glu	Arg	Phe	Ser	Leu	Glu	Ala	Lys	335	340	345
Asp	Ala	Lys	Ile	Leu	Val	Glu	Gly	Arg	Ala	Val	Gly	Ala	Lys	Ile	Gly	350	355	360
Ser	Gly	Val	Ala	Arg	Val	Val	Arg	Ser	Leu	Glu	Asp	Met	Asn	Arg	Val	365	370	375
Gln	Ala	Gly	Asp	Val	Leu	Ile	Ala	Asp	Met	Thr	Asp	Pro	Asp	Trp	Glu	380	385	390
Pro	Val	Met	Lys	Arg	Ala	Ser	Ala	Ile	Val	Thr	Asn	Arg	Gly	Gly	Arg	395	400	405
Thr	Cys	His	Ala	Ala	Ile	Ile	Ala	Arg	Glu	Leu	Gly	Val	Pro	Ala	Val	410	415	420
Val	Gly	Ser	Gly	Asn	Ala	Thr	Asp	Val	Ile	Ser	Asp	Gly	Gln	Glu	Val	425	430	435
Thr	Val	Ser	Cys	Ala	Glu	Gly	Asp	Thr	Gly	Phe	Ile	Tyr	Glu	Gly	Leu	440	445	450
Leu	Pro	Phe	Glu	Arg	Thr	Thr	Thr	Asp	Leu	Gly	Asn	Met	Pro	Pro	Ala	455	460	465
Pro	Leu	Lys	Ile	Met	Met	Asn	Val	Ala	Asn	Pro	Glu	Arg	Ala	Phe	Asp	470	475	480
Phe	Gly	Gln	Leu	Pro	Asn	Ala	Gly	Ile	Gly	Leu	Ala	Arg	Leu	Glu	Met	485	490	495
Ile	Ile	Ala	Ala	His	Ile	Gly	Ile	His	Pro	Asn	Ala	Leu	Leu	Glu	Tyr	500	505	510
Asp	Lys	Gln	Asp	Ala	Asp	Val	Arg	Lys	Lys	Ile	Asp	Ala	Lys	Ile	Ala	515	520	525
Gly	Tyr	Gly	Asp	Pro	Val	Ser	Phe	Tyr	Ile	Asn	Arg	Leu	Ala	Glu	Gly	530	535	540
Ile	Ala	Thr	Leu	Thr	Ala	Ser	Val	Ala	Pro	Asn	Thr	Val	Ile	Val	Arg	545	550	555
Leu	Ser	Asp	Phe	Lys	Ser	Asn	Glu	Tyr	Ala	Asn	Leu	Ile	Gly	Gly	Ser	560	565	570
Arg	Tyr	Glu	Pro	His	Glu	Glu	Asn	Pro	Met	Ile	Gly	Phe	Arg	Gly	Ala	575	580	585
Ser	Arg	Tyr	Val	Asp	Pro	Ser	Phe	Thr	Lys	Ala	Phe	Ser	Leu	Glu	Cys	590	595	600
Lys	Ala	Val	Leu	Lys	Val	Arg	Asn	Glu	Met	Gly	Leu	Asp	Asn	Leu	Trp	605	610	615
Val	Met	Ile	Pro	Phe	Val	Arg	Thr	Leu	Glu	Gly	Arg	Lys	Val	Ile		620	625	630
Glu	Val	Leu	Glu	Gln	Asn	Gly	Leu	Lys	Gln	Gly	Glu	Asn	Gly	Leu	Lys	635	640	645
Ile	Ile	Met	Met	Cys	Glu	Leu	Pro	Ser	Asn	Ala	Leu	Leu	Ala	Asp	Glu	650	655	660
Phe	Leu	Glu	Ile	Phe	Asp	Gly	Phe	Ser	Ile	Gly	Ser	Asn	Asp	Leu	Thr	665	670	675
Gln	Leu	Thr	Leu	Gly	Leu	Asp	Arg	Asp	Ser	Ser	Ile	Val	Ala	His	Leu	680	685	690
Phe	Asp	Glu	Arg	Asn	Pro	Ala	Val	Lys	Lys	Leu	Leu	Ser	Met	Ala	Ile	695	700	705
Lys	Ser	Ala	Arg	Ala	Lys	Gly	Lys	Tyr	Val	Gly	Ile	Cys	Gly	Gln	Gly	710	715	720
Pro	Ser	Asp	His	Pro	Glu	Leu	Ala	Glu	Trp	Leu	Met	Gln	Glu	Gly	Ile	725	730	735
																740	745	750

	755		760		765
Glu	Ser	Val	Ser	Leu	Asn
	770		775		780
Leu	Ala	Lys	Leu	Lys	Ser
785			790		

<210> 3
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Up stream primer

<400> 3
 ggggatcctt tcagcgggtga taccgg

26

<210> 4
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Down stream primer

<400> 4
 ggaagctttg cggcggccgc tccgc

26